Health

A Journal Devoted to Healthful Living

Edited By Dr. U. Rama Rau & U. Krishna Rau. M.B.B.S.

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Our New Year Greetings

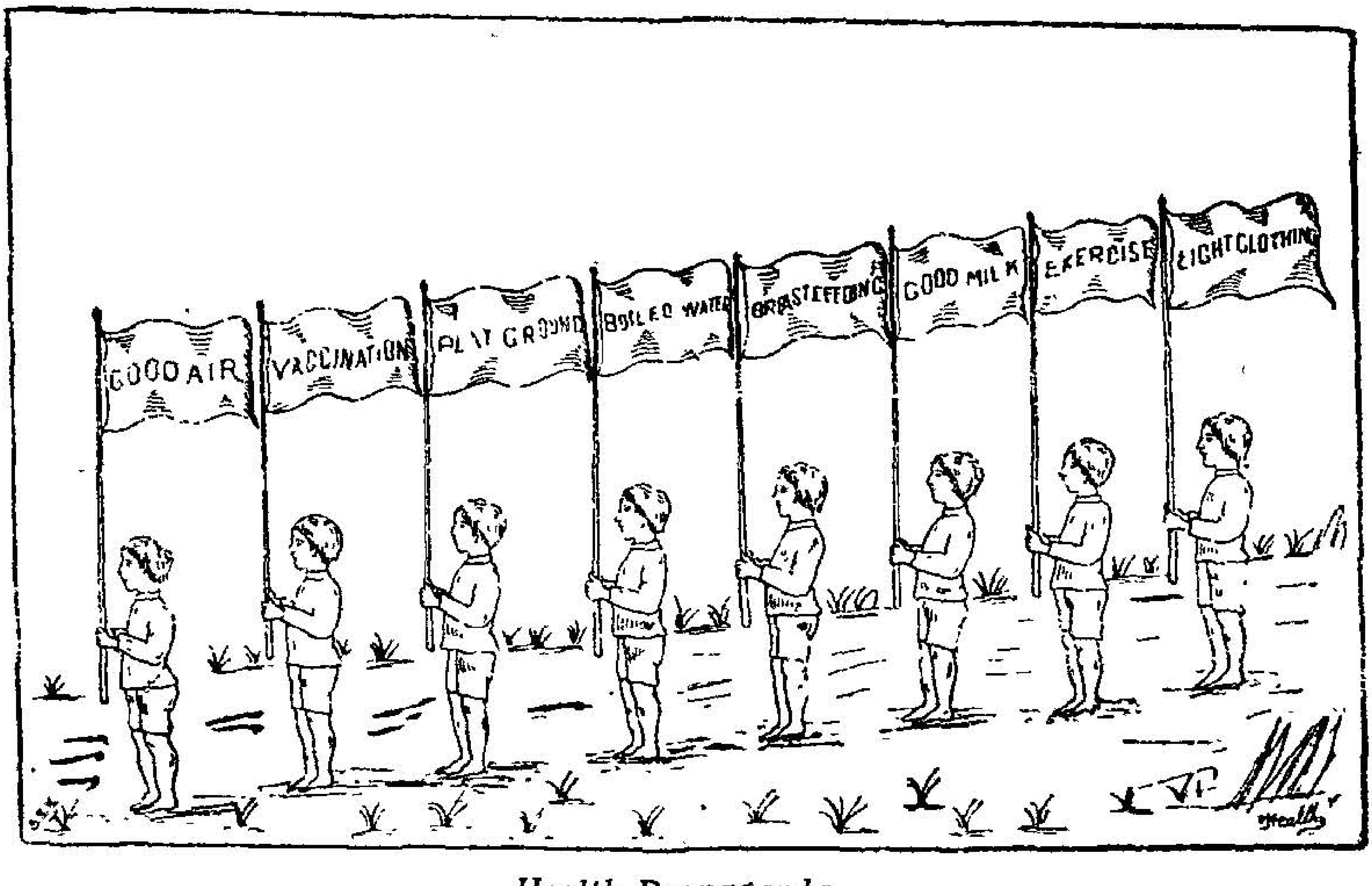
The time has come for another New Year Greetings. The New Year Day—the 1st of January, 1937, luckily, happens to be the 15th Birthday of our " HEALTH ". On this doubly auspicious occasion, we wish all our readers contributors, advertisers and co-workers, a happy, healthy, peaceful and prosperous NEW YEAR and pray to the Almighty to shower His unbounded blessings on "HEALTH" and its votaries.

EDITORS.

Maternity and Child Welfare in Madras

UNDER the auspices of the Health Propaganda Board, a Conference was held at Madras on 12th Dec. '36, on Maternity and Child Welfare, to which a large gathering of medical men and women, besides many visitors, attended. The Hon. Sir Charles Souter, I.C.S., a member of the Executive Council of the Governor of Madras and the Chief trustee of the Health Propaganda Board, opened the Conference. Lt. Col. C. M. Ganapathi, I.M.S., Director of Public Health, Madras, welcomed the delegates. Major-General Sir Frank Connor, I.M.S., Surgeon-General with the Government of Madras, presided.

Sir Charles Souter, confined his address to the subject of Sanitation and Health in schools and as a corollary in the homes of children and stated that, 'propaganda work should begin amongst children in schools, who form the future population of this Presidency.' This is as it should be. "In the first place, it seems essential," he continued, "that visitors to schools should periodically examine children as to their general state of health, more particularly attention being paid to the examination of the teeth and eyes". There is no denying the fact that most of the school children are suffering from various kinds of diseases, all due to malnutrition and unless they are set right in time, the result will be disastrous not only to them and their families but also to the Nation and the State. But of what avail can the visitors' examination be? It is the medical man's examination that will be of any use in these cases. Unfortunately, medical inspection of school-children in this Presidency has been discontinued for want of funds and wherever it is done, it is done in a perfunctory and haphazard



Health Propaganda.

manner. Unless the scheme is revived and worked up in the right spirit and some provision is also made for the treatment of the defective children in State hospitals or in special hospitals set apart for the purpose, no good will result, for the teachers on whom this responsibility is sought to be thrust, are not equipped with the required knowledge and the generality of the parents are too poor to give the necessary treatment.

With regard to the sanitation of the home, Sir Charles Souter observed :—"It is all very well, to train the children in schools in methods of sanitation and health but when they go home and find themselves in insanitary conditions not only is a great part of the teaching lost but they see something entirely different from what the teacher has taught them, which is most deleterious to their health". No doubt the teacher can do a good deal in inculcating ideas of cleanliness in school-children. But here again, the teacher does not possess the necessary knowledge in Hygiene nor is Hygiene a compulsory subject to be taught in schools. These obstacles must be removed and unless the Government makes Hygiene a compulsory subject for study and the teachers have obtained a course of instruction in Hygiene, no appreciable advance can be made in this direction.

It will certainly interest our readers to know what Lt. Col. A. J. H. Russell I.M.S., the then Public Health Commissioner with the Gavernment of India, had stated in his administration report for 1930, with regard to Health Education in Schools :—

"There can be no doubt that before any great advancement in public health in India can be attained, preventive medicine must be carried to the rural communities, since the vast majority of the people still live a rural life, untouched by urban influences. In other words, this means a spread of education but it must be borne in mind that for primitive peoples there must be a biological background for any system of education which it is proposed to introduce. Agriculture must continue to be the basis of all education in India if the social systems are to survive and for this we need the assistance of the scientists in spreading the teaching of biology. With the help, and perhaps in spite of the educationists, the curricula of the primary schools as well as those of the secondary schools and colleges must sooner or later include instruction in hygiene and health, and if educationist pedants maintain that curricula are already over-crowded with subjects made compulsory by examination requirements, then so much the worse for these subjects. One or more will simply have to be scrapped. All that is wanted is a simple syllabus dealing with the main facts in life, and were training colleges equipped to give instruction in this direction, such a syllabus should be easily mastered and taught by the average teacher. By this method a practical step would have been taken to give effect to the spread of information which is becoming more and more urgent, and were that step taken, there might be less misery and unhappiness and there would certainly be a more enlightened public opinion as to the necessity for advance in the standards of public health."

Again, with regard to the poor bud-

getary provision made by Government, for public health, he observed :—

"Few nations or states have ever been extravagant in their expenditure on public health and hygiene. If indeed we were to spend a hundred times as much as we now do upon the pursuit of nature's secrets and upon the practical application of the knowledge already gained by that pursuit in the field of hygiene, it would not be extravagance. The great danger at present is that Governments will apply the pruning shears so ruthlessly that progress in the development of public health will be brought to a halt and that the gains already made in the control or elimination of disease will be lost through a policy of false economy."

Sir Charles Souter would like to see that propaganda is directed towards pointing out specific examples of nuisance and suggesting means to improve them rather than to general lectures on health. But this means men and money. He, however, finds a solution for this problem and calls upon the medical profession to take up health propaganda work. He says :—

"Here I should like to conclude by appealing to the Medical Profession whether they belong to this board or not, to help us in the course of their profession. I look upon the medical profession not merely as a profession to cure any specific case of disease, whether members are practitioners belonging to Government service or not, I consider it their duty to go beyond the immediate case with which they are dealing and thus carry on propaganda for the better health of the people".

We have ourselves forestalled Sir Charless Souter fourteen years ago when we launched the "Health" journal, in English and in three vernacular languages, Tamil, Telugu and Canarese. as a means of health propaganda but the results are not quite encouraging. Granting that all medical men hold it as a sacred duty to undertake health propaganda, it can only touch the fringe of the problem, for only 10 % of the total population of India get scientific medical treatment at the hands of qualified medical practitioners, the rest getting treated by practitioners of indigenous medicines or going without any treatment whatever.

The welcome address of Lt. Col. C. M. Ganapathi, Director of Public Health is devoted exclusively to the Maternity and Child Welfare and Nutrition problems. He stressed the need for greater co-operation between the Government and the public in these words :—"When it is remembered that our infantile and maternal mortality rates stand as high as 178.5 and 8.5 respectively, one cannot help coming to the conclusion that the public needs to wake up and to start taking notice, in other words, the co-operation forthcoming from private and public agencies must be increased a hundred fold before we can consider ourselves to be in a satisfactory position from the public health point of view."

This problem is closely associated with the economic problem. As Col. Russell, I.M.S., Public Health Commissioner with the Government of India, once remarked, 'the vast sums of money expended on our maternity and child welfare schemes are a sheer waste if the mother and infant after leaving the institutions, are consigned

back to their dark, dreary, ill-ventilated hovels, situated in a slum area, with practically nothing to eat'. The same sentiment was expressed by the Rt. Hon. Sir Kingsley Wood, M.P., Minister of Health, England, in his address to the National Conference of Maternity and Child Welfare, held in London in 1935. He said "Before dealing with the other aspect of my address, I would also like to make this observation—that I don't think you can over-emphasise the importance to Maternity and Child Welfare, of the better housing of the workers of this country. I believe that when we have cleared away a great majority of the slums in this country in the next five years, we shall in this generation have made one of the biggest contributions to the health of the people that any generation has made". So, housing and nutrition form necessary and indispensable preludes to the success of Maternity and Child Welfare Schemes.

Lastly, we come to the Presidential address. Sir. Frank Connor deplores the existence of much ignorance and inertia among the public and says that 'until this is gradually removed by education and propaganda the problem will remain unsolved'. In another place he remarks: "You can talk of socialism, of Congress or Parliamentary Government and anything you like, but until people learn to keep their houses clean, the children healthy, and their women not dying from confinement complications, until that comes about, talk of nationhood and national things is nonsense. That is my firm belief".

In answer to this, we must point out, that the root-causes of the evil lie, in our opinion, in poverty and illiteracy. Remove poverty, remove illiteracy, remove slums, and as sure as day follows night, India will soon rise up to the level of the A1 nations of the world.

Physical Fitness

—By Khagendranath Chatterjee,—

M.B., Lt. I.M.S. (Retd.), Chinsura, Hooghly,

(Contd. from page 204 of 'Health', Vol. XIV, No. 11, 1936.)

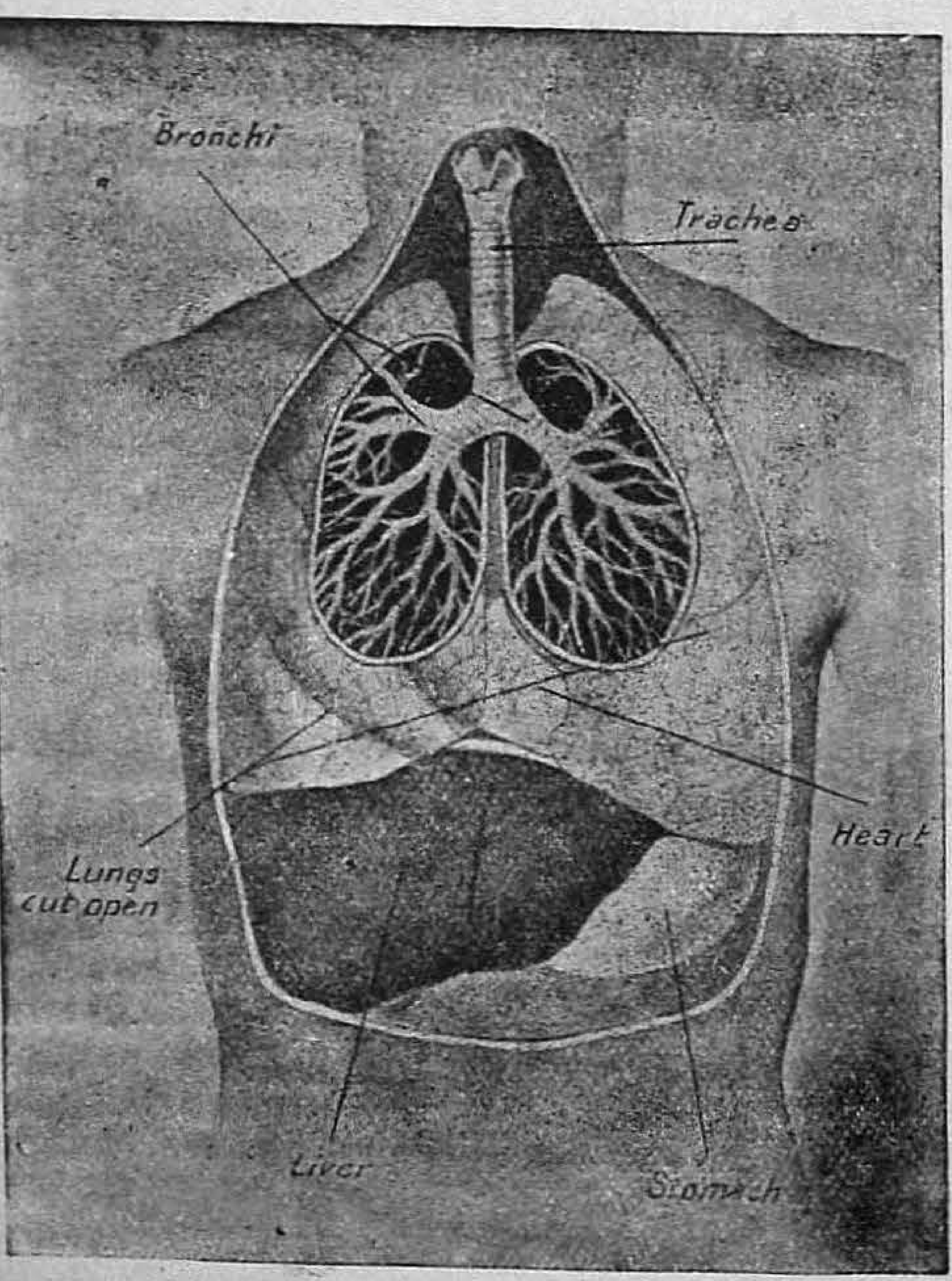
PART IV

The Throat

By throat, it is sometimes meant to denote externally the upper and front part of the neck, as is expressed by the phrase, "cut throat", but generally and more correctly, it means the interior of that part, which is partly visible when the mouth becomes wide open. The throat is, therefore, a cavity inside the neck near its junction with the head, and communicates with the nose and mouth above and with the wind and food pipes below. This cavity is medically called the pharynx, and can be described in three parts. The portion which has connection with the nose, is called the nasal part, that which is continuous with the mouth is called the oral part; its communication with the organ of voice and respiration, called the Larynx is known as the Laryngeal part. The throat finally becomes continuous with

the food pipe, known as the oesophagus, which passes down the neck to unite with the stomach in the abdomen, which will be described later on. The wind pipe, through which air passes into the lungs, is called the trachea and begins from the end of the Larynx, the organ of voice, and respiration as well.

The nasal part of the throat, called the naso-pharynx, lies behind the nose,



The Trachea and the Lungs.

and is almost a closed chamber, except in front where it has free communications with the nasal passages. Its roof and walls are closed, and are formed by the base of the skull and the sides of the neck, respectively. On the upper part, where the nasal cavities open into it, are the openings of the two tubes called the Eustachian tubes, which communicate with the ears, possibly to aid hearing, by transmitting vibration of sound from the external ear into the wide cavity of the throat.

In the healthy state, the Naso-pharynx should be free, but when catarrh sets up in the nose, there is every chance of its extending into the throat, and from the throat into the ears, through the Eustachian tubes. These tubes thus get blocked with plugs of mucus, and partial deafness occurs, until the plugs come out. The catarrh may also reach the ears, and set upp ain, inflammation, and discharges which at first remain accumulated behind the membrane called the Drum, till finally they burst through the membrane, making a tear in it. This is the way how perforations of the drum take place, and is also, the commonest cause of pus in the middle ear, called Otorrhœa. One should not therefore, neglect a common cold or catarrh of the nose and throat, considering the mischief, that may arise from this simple trouble.

It has been previously stated, that children sometimes suffer from a kind of growth in their Naso-pharynx called the adenoids, which obstruct both the nasal passages as well as the passages to the ears from the interior of the throat, called the eustachian tubes, as already explained. By obstructing the nose *i.e.* by preventing the free access of air into the lungs through them, children are led to breathe through their mouth, which is a very unhealthy habit, and gives rise to a lot of mischief. Distortions

of the shape of chest, such as flattening and narrowing, take place owing to faulty expansion. Deformities of the jaws and teeth also occur as a result of this continued mouth breathing, as the soft bones of young children yield to mechanical forces such as blowing of air and muscular actions and become deformed in the long run. The arch of the upper jaw, thus becomes narrow in front and the teeth project out of the mouth, and are also irregularly set. Whenever, there fore, these growths are suspected in children, either from the mouth-breathing, or by the deformities of chest and jaws, they should be treated without loss of time. Early cases can be cured by keeping the children in open air and sun-shine, and teaching them to breathe deeply through the nose, by keeping the mouth closed ; advanced cases should be treated surgically.

The oral part of the throat is called the Pharynx proper, and is almost continuous with the mouth. This part is visible as soon as the mouth is made wide open.

It will be seen, that although the throat is continuous with the mouth, there stands in the middle, a double arch of mucous folds with muscular fibres within, separating the two cavities from each other. The arches are the prolongations of the soft palate, which itself is arched and forms the rear part of the arch or roof of the mouth. This soft palate, is free and moveable, as opposed to the hard and fixed palate, which makes the front part of the arch of the cavity of mouth, and hence the names, soft and hard palates. It may be mentioned here, that the nasal passages rest above these palates, *i.e.* above the arch of the cavity of the mouth. In the centre of the arches mentioned above, hangs a small conical body, composed of the same structures, called the "Uvula," which is also very freely moveable. From the ends of the arches, on the two sides come down long folds of mucous membranes, like pillars of ordinary arches, and are also called the pillars of the Fauces. These pillars are two in number on each side, and are separated from one another by a hollow space, which gives shelter to a marble like body called "tonsil". The tonsil is a soft body and is made of a substance called the "lymphoid tissue", of which the glands of the neck are also composed. The tonsils are very important glands in childhood, as they supply protective powers to the body against invasions of diseases, but are themselves, at the same time, liable to be invaded by various serious diseases, like Diphtheria, Rheumatism, Tuberculosis etc., and are for this reason known as the "open gates" of infection. The tonsils get inflamed easily, that is they become swollen, red and painful, and give rise to considerable difficulty in swallowing food, and are accompanied with fever also. This condition is known as tonsillitis, and is sometimes associated with a general redness of the entire cavity of the throat, which is commonly known as "Sore throat". This soreness of the throat may be a simple affection, or may be the onset of a more serious malady such as the diphtheritic sore throat, and therefore, this condition in children should always be guarded against. Children sometimes suffer from a chronic enlargement of these tonsils, which give rise to the same difficulties as the growths called adenoids, just described. They cause uneasiness in the throat, and produce

lung diseases like asthma, and general wasting follows. In view of these evil effects of the tonsils on the general health, they should be surgically removed for better results. Next to the tonsils, comes the elongated cone shaped body the "Uvula", which hangs in the middle. This little organ is also subject to inflammation, and becomes longer than usual and touches the back part of the tongue on lying down. It becomes a source of constant cough as it tickles the back of the tongue. The back of the throat, that is the hind part of the cavity of throat also becomes congested as a result of chronic irritation of the part either by cold wind, or dust or smoke It may also occur as a result of excessive smoking. Several nodular bodies appear on the wall of the throat, which give rise to constant irritation of the throat, and therefore, a short and distressing cough persists, so long as they do not heal up. This type of cough is known as throat cough, and this condition of the throat is known as "pharyngitis". In order to prevent these disorders of the throat, one should avoid all irritations to it, and should always live in fresh air, which should be warm and moist, *i.e.* not dry and chilly.

The Laryngeal part of the throat, is only that portion, which communicates with the opening of the Larynx. This opening is however, regulated by a lid, called the Epiglottis, as the Larynx itself is known as the Glottis. This lid looks like a small tongue, and is fixed to the back of the tongue. The lid covers the mouth of the Larynx, when food is swallowed, as the tongue falls back during that time, and the food is prevented thereby to enter the Larynx, which is only meant for respiration, and the lid, is then raised again for air to pass.

EFFECT OF ALCOHOL ON CHILDREN

J. M. Obarrio has nothing that is good to say for the effects of alcohol on children no matter how small the quantity, and declares he has seen dream-like hallucinations as a result of chronic alcoholism in practically all the subjects. Then while the symptoms may be only seen in neurotic diseases every one of the pathologies due to alcoholic excess in adults may be detected in children. As an example Obarrio describes the case of a girl of five who showed much hepatic enlargement with impaired tendon reflex having been accustomed to alcoholic liquors from earliest years. He has met three juvenile cases of alcoholic polyneuritis of whom one was under four, while a boy of five who was accustomed to wine and beer for a year, within the twelve months became subject to polyneuritis and showed cirrhosis plainly. (*Buenos Aires : Archives de Pediatria.*)—*Medical World.*

Sanitary Arrangements During Festival —How Epidemics are Prevented

By G. T. Gopalakrishna Naidu, L.H.P.,

— Asst. Dist. Health Officer, Chittoor. —

PART II

(Continued from Vol. XIV, No. 12, p. 236.)

[Summary of the previous part; details of water-supply in a festival centre have been furnished. Provision of Bore-wells, tube wells, dugout cask wells, fencing around tanks, conversion of step wells into draw wells etc., have been discussed. Necessity of chlorination of water supplies, the method of chlorination, the frequency of chlorination etc., have been detailed out. Reference has been made to a few festival centres such as Velankany in Negapatam Taluk.]

Conservancy

Rubbish removal

(a) *From roads.*—Removal and proper disposal of rubbish from the festival centre is the primary care of a Public Health Official. Sweeping work in the early hours of the morning before people get up from their beds has been found to be very effective. This may be supplemented by posting a few sweepers during the day at strategic points so that they may usefully employ themselves then and there whenever leaves and other stuffs are thrown by indiscriminate people.

(b) *From houses and vacant sites.*—It is usual to find rubbish heaps in back-yards of houses and in vacant sites and therefore it should be the aim of the Public Health Official to take immediate action the moment he visits the village, for preparation of his Form I Report for recommending sanitary arrangements to be adopted in that centre. I should like to impress upon this point again and again due to its importance as I have found that this rule has been observed more in the breach than in its observance. There is no wonder therefore that flies do abound wherever one turns and obstinately refuse to clear out.

Night-soil removal

The removal of night-soil is as important as removal of rubbish. Indiscriminate defæcation has been the rule with pilgrims, Hindu and Mohammedan pilgrims being the worst sinners in this respect. But Christian pilgrims as in Velankany, Tanjore

UNHEALTHY BACK-YARD HOUSE REFUSE. COW-DUNG HEAP.

District have used temporary latrines with meticulous care. These temporary latrines are to be located in the crowded parts of the festival area, so as to actually serve the pilgrims. There is no point in erecting these atrines far away outside the village, where nobody frequents. Each latrine should have a scavenger to remove night-soil by turns at all hours of the day and night. Provision of clean water for ablution purposes in tubs together with small tin-cannisters for the actual service has been found to be very efficacious and the importance of these temporary latrines has considerably been enhanced. And if each of these latrines is continuously lighted during nights by a petromax light, then the oft-quoted statement that erection of temporary latrines in a festival area is a waste will be exploded. Further your attention should be drawn to the proper disposal of night-soil. A convenient system is trenching during festivals, and this work should go hand in hand, as otherwise an accumulation of night-soil in one or all the way-sides is enough to damn your work however much you might have been exerting in other branches.

LIGHTING

Next in importance is lighting, an efficient working of which is proof positive about the success of the festival. Petromax lights are preferred to Washington lights as the former can be hired at half the cost of the latter; and consequently the number of lights in service will be double the number of the other kind. Sometimes in perennial pilgrim centres as Tirupati, Tirumalai and Tiruchanur in Chittoor District, it has been a very wise move in having provided electric lights on the routes of pilgrims. Devotees can start from Tirupati as early as 1 or 2 a. m., and reach Tirumalai within 3 to 4 hours. The weariness of going up the seven miles ascent is less felt during the night travel.

A study of festival arrangements is not complete without an enquiry into the nature of accommodation in these centres.

ACCOMMODATION

(a) *Permanent accommodation.*—It should not be forgotton that choultries, lodging houses, and mutts should be licensed annually. Frequent visits of these have to be made and Sanitary Officials satisfied as to the lime-washing of walls, plastering of flooring, provision of latrines, silt removal in wells, provision of Bore wells in case draw wells do not exist and removal of rank vegetation and rubbish in the compound. In fact a systematic weeding out the insanitary conditions in these choultries should be your aim. Judicious watch has to be made when feeding is done in choultries and this should be extra vigilant when pilgrims are gathered from all parts of the Presidency and sometimes from even outside the Presidency. We had a very grave experience during an outbreak of cholera very recently during the Brahmotsvam festival, Tirumalai. Infection started in Madhava Mutt up the Hills and soon spread to Tirupati and Tiruchanur and other places. All our resources had therefore to be utilised before the epidemic was nipped in the bud.

(b) *Temporary accommodation.*—Installation of temporary sheds is necessary when permanent ones are not available as in Velankanny and Arokiamada Festival in Negapatam Taluk

and Amavasai festival in Kodaikari (Point Calimere S. I. Ry.), in Tiruthuraipundy Taluk in Tanjore District. These sheds are to be strong enough and well protected from wind and rain. They should be provided with water tanks, having taps with non-waste pumps and special sweepers deputed to look after the conservancy work. It may be interesting to mention here that such temporary sheds are erected and well maintained by the South Indian Railway Company authorities as in Kodaikari. It should be remembered that conservancy menials should be accommodated in one or more such sheds and their wants attended to. Else the health of the scavengers is much affected by weather conditions, which otherwise result by exposure. Also it is necessary that a good number of sheds are thrown open, a few for parking cars, and some for jatkas and bullock carts For it has been my experience to see horses and bulls drenched during rains and cars floundering in mud and refusing to wade through knee deep water.

PROPAGANDA

A festival centre is the best place to advance ideas of Public Health and Sanitation and this is done by intensive propaganda. A Public Health Exhibition in a festival centre should be the aim of a Public Health Official, no matter how modest it may be. Magic lantern lectures, Cinema demonstrations and use of Gramaphone apparatus to attract crowds, installation of Microphone and talking to big audiences through Microphone have all been found efficacious. One should take an interest in this kind of work, as otherwise it becomes a dull affair and the pilgrims return the less benefitted.

OTHER REQUIREMENTS

The needs of a festival area are still many and numerous. A few important of these are the provision of Temporary Dispensaries, keeping ready Ambulance cars for emergencies, Dholies as in Tirumalai Hills, boats and Catamarans as in Kodaikari (Point Calimere) and last but not least, repairs to roads leading to festival centres. The importance of the above conditions is self evident and does not call for separate explanatory remarks.

CONCLUSION

In the foregoing paragraphs, I have attempted to present to the readers a few of my experiences and they have been found successful so far. It is possible that one or all of these recommendations may not be found suitable to different localities due to the operation of several causes which one may not anticipate. However I shall be guided by any discussion on this behalf by kind friends.

Set a bound to your desires. Think not of how much others have, but of how much they have which you can do perfectly well without. Be not the slave of show or circumstances.—
—*Theodore Martin.*

Latrine Arrangement in Villages

—By T. D. Mukerjee, M.B. D.P.H.—
Burdwan (Bengal.)

The question of the form, location, installation and maintenance of latrines for people living a country life, in the mofussil, where there is no public body for sanitation and other purposes, has not frequently attracted the attention of the public although its importance cannot be denied. It may therefore be taken for granted that my time and the space in your esteemed journal will not be illspent on this subject of vital importance to mankind.

In villages, there is practically no arrangement for latrine. The people go to the outskirts of the villages and ease themselves in open fields behind some groves. Sometimes they even use places close to the vicinity of their houses and even on the banks of some tank or river. In this way the neighbouring places are made insanitary and the water of the tank is polluted. Flies which live close to the habitations feed upon the stools and pollute the food stuff, and if the stools are infective they carry infection to the villagers. This is the custom running down from ages, yet the people live healthy lives, because the natural power of the soil bacteria and the sun shine and open air, cause immense service to mankind, by eradicating the infective material. The stools in the open field cause much less injury to health than the stools close to the dwelling house, and this has become a problem of the country life now-a-days. Often, the sick persons cannot go to a distant place, and persons suffering from some infective gastro-intestinal disease, pass stools, which are infective, and therefore are dangerous to public health.

Often the country people want to construct a privy but as ordinary service privy requires the services of a methor for the disposal of the night-soil, they cannot make an arrangement for it. So the privy should be such, which is efficient without the service of a methor, as well as economical.

Modern system of latrine of the septic tank type is gaining favour of all other types of privies in rural areas, as well as in urban places, and this type is also the choicest one. In this type the stool pan may be prepared with simple cement mortar or a pan with a water sealed tube may be purchased from Messrs. Burn & Co. Other types of the pan used in water closet system are costly.

I give a description of the most simple type of such a latrine which can be installed in any out-house of a village. A covered pucca cistern is made with a partition wall. This wall has got one or two openings in the middle to allow the contents of the first chamber to pass into the second. The pan may be made with cement mortar and is of cone shape. It is placed on solid earth to a little higher level than the cistern; from which a bent pipe leads to the cistern and this pipe is led to some distance inside the water level. The bent pipe contains water and allows the stools to pass in the cistern with some water but does

not allow to pass any gas through it. In this cistern night soil and water remain in a dark chamber. The scum floats on the top and the superfluous water passes through a pipe attached to a cistern on opposite side of it. This pipe is placed in such a way that it allows superfluous water to pass away but does not allow any scum to come out and therefore the pipe commences a little below the scum level. To remove the insoluble material collected at the bottom of the vat as well as for inspection of the inside when necessary, there is made a hole on the cover of the cistern. The hole is made air-tight by an iron plate fixed with cement mortar, which can be removed during the time of opening of the iron plate and this is called the man-hole. The pipe in the other end of the vat leads into a bed of broken pieces of brick so that the water leading to the bed is evaporated. This bed of broken bricks is covered with a layer of loose earth to the level of the ground on which small plants may be grown. An iron pipe of half an inch diameter and about eight or ten feet long is fixed to the vat in an upright position to allow the gas of the vat to pass off in the open air high up. The capacity of the vat is generally made three cubic feet for one daily user of the privy. If it is not used daily, the capacity of the cistern may be made according to the requirement, the only precaution to be taken is to pour some water daily inside the vat through the stool pan so that the level of the water remains constant for the proper action of the cistern.

A form of bacterial growth takes place inside the cistern and the night-soil is liquefied and organic nitrogenous material of the night soil is converted into inorganic nitrogenous salts, which dissolved into water pass off into the soil.

Once installed it creates no difficulty in the maintenance of the cistern and the cost is within the means of many villagers.

There may or may not be any super-structure for the privy, any form of screening may do; and it is very simple, inoffensive and within the reach of villagers.

This type of latrine may be made with richer and costly material if so desired, and in that case resembles a privy of the water closet system, as is found in large cities.

Though this type of latrine is known to many and is gaining favour, yet I draw public attention to its use through the medium of this paper to make it more popular. As one table can be prepared with only four legs and a top as well as with rich appendages, this type of latrine may also be constructed in a very cheap as well as in a very costly way. The main principle is the same and it is nicely effective.

The advantages are manifold and the type is often mentioned as a sanitary type of latrine. It can be constructed and attached to dwelling room and can be installed 25 feet away from any water source. No offensive odour comes out of it, no cleaning is required, no service of any kind is required for the removal of night soil. After 10 or 12 years the chamber may be required to be cleaned once off the insoluble material collected at the bottom of the cistern.

No antiseptic should be allowed to enter inside the tank as it hinders the bacterial action of the night soil by

killing the organism responsible for the treatment of the night soil.

All the protein matters are highly nitrogenous compounds and in nature these nitrogenous matters undergo a constant change. The organic nitrogenous compounds are converted into simple nitrogenous substances which are again transferred to organic complex substances specially by the vegetable kingdom. The conversion is generally done by bacteria, of which Bacillus Subtilis and Bacillus Proteus are two important groups. A putrefactive change occurs and in this process most of the pathogenic organisms are destroyed, thus keeping the balance of safety for the higher beings. Of these bacteria some work in the presence of oxygen while others can grow only in the absence of oxygen and these bacteria are important in the putrefaction of human execreta in a septic tank. The faecal matters are disintegrated. These bacteria grow enormously, liquefaction occurs, the little quantity of oxygen entering the septic tank disappears and the contents become septic. All complex organic compounds are converted into simple inorganic matters.

The method of septic tank treatment of night soil consits of two processes, anaerobic and aerobic treatment. In the closed chamber of the tank the liquefaction of the night soil takes place by anaerobic bacteria and the sewage travels slowly from the inlet to the outlet of the tank and all organic nitrogenous materials are converted into inorganic nitrogenous salts by these bacteria. It is a form of digestion of the night soil inside the tank, a black coloured, somewhat offensive liquid comes off from the outlet pipe of the tank which requires some further treatment and this treatment is done by aerobic bacteria. Previously this treatment was done in filter bed, which is elaborate and costly. In the present system, this effluent is allowed to pass through a porous pipe laid in a bed of cinder or brick bats, placed under about one foot below the ground level. The bed is covered with earth and if some plants are grown on it, they facilitate evaporation of the exudate water and the soil bacteria exert some influence in the way of purification of the effluent of the tank. Some particles of the stools which are not liquefied and settled in the bottom of the first chamber form a black deposit which requires removal from time to time. These consist of indigestible materials and are generally cellulose, grits, etc. A gas is formed inside the tank, for which an outlet pipe is attached to the tank in such a way that the gas rises high up the dwelling place and is diluted in the air above. This gas is compound of CO_2. $H.$ N_2 and CH_4. It is not so offensive but is inflammable.

The type and the process of action are here given in detail and the installation now depends on the choice of my venerable readers.

"The surest road to health, say what they will,
Is never to suppose we shall be ill.
Most of those evils we poor mortals know
From doctors and imagination flow."—*Churchill.*

— COLD BATH —

By Dr. Brajendra Chandra Battacharya
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THE skin has an important function of excreting the waste products in the system through its spores. In this process of excreting waste products the spores in the skin are liable to be blocked as the drains become blocked with rubbish. By bathing, the spores become clean and the excretion of the waste products becomes easy and the system gets rid of injurious substances. Water is required in cleansing the drains in towns and villages, similar is the case inside the body. The system pushes water through the spores in the skin and thereby cleanses the system. This water is called 'sweat'. For this purpose numerous sweat glands are planted, as it were, in the system near the skin. If these spores in the skin remain blocked the waste products cannot be excreted and these prove injurious in many ways. Thus we see one important function of bathing is cleansing the skin and thereby aiding the scavenging of the system.

Another function of bathing is relieving the system of the excess of heat generated in the system during the combustion of the various proximate principles of the food-stuffs and of the system. A particular amount of heat is required for the maintenance of good health. In the natural process of the combustion of various food-stuffs heat is generated—and heat is necessary for life. The surplus heat is neutralised by evaporation from the skin surface, in respiration, urination and defæcation, and by bathing. If we do not bathe we feel uneasy and this uneasiness is relieved by bathing.

By bathing the skin is cleansed and many skin diseases are prevented, and cured.

At the very commencement of bathing the heat centre is stimulated and new heat is generated, and a sensation of exhilaration is felt. This stimulation of the heat centre and evolution of heat stimulate all the vital centres; and by this stimulation the system becomes invigorated and capable of combating diseases. This result is effected especially by bathing in cold water very early in the morning before sun rise. For this reason we see that those who bathe early in the morning are generally very strong and healthy.

Those who are chronic sufferers from malaria which proves resistant to quinine are much benefitted by morning bath. The sufferers from chronic skin diseases too, will be much benefitted by morning bath. Those who suffer constantly or frequently from nasal catarrh will invariably be relieved by morning bath. I think this to be the only procedure to be adopted for chronic sufferers from nasal catarrh.

The practice of morning bath should be continued throughout the year and for all time. Merely bathing in hot weather and discontinuing bathing at the very commencement of cold weather is not a good practice, rather a

bad one. By this faulty habit harm may be done instead of good. The most invigorating and healthy practice is the bathing in the morning throughout the year, especially in the cold weather. The cultivators who find pleasure in seeing the fight of oxen, rear oxen and bath them very early in the morning in the cold weather, not to speak of hot weather.

As long as the system remains strong enough to react to the exposure to cold by stimulating the various vital centres and the heat centre, bathing in cold water in helpful. Bathing is harmful in the devitalised condition of the system. In this case the vitality will be lower insteed of being stronger, and the system will be a victim to various microbes and the bathers will be liable to be attacked with various diseases. This should be borne in mind.

The bathing should be continued as long as the sensation of warmth is felt and discontinued at the commencement of feeling cold. Submerge your body in the water of a tank or river totally; rub the whole body including the head, especially the back of the head, back of the ears and neck. You will see that warm water falls from your hair to your ears; go on rubbing the head and pouring water over it. In a short time you will see that water pouring from your hair to your ears is not warm—this is one of the indications for discontinuing bathing. Rub the side of your fore-head at the angles of the eyes you will see that warmth will be felt in the eyes as if luke-warm water is running over the eyes. Discontinue bathing when the sensation of warmth is not felt. The arm pits, groins and the back should be similarly dealt with. Don't remain in water standing without pouring water in the head; in the case of standing in water without wetting the head, congestion of brain may occur, and this should be borne in mind.

The practice of morning bath should be commenced in hot climate and not in cold climate—this is an important point.

The White Loaf

By "O. D."

In France, as in other European countries, the quality of white bread and its injurious effects on the system are engaging more attention every year. Despite its almost entire absence of nutritive value, from the delusion that whiteness is a guarantee of purity, is in almost universal favour, and of course, a powerful vested interest reaps the advantage. The trouble, as A. Daude-Baucel points out, in a lecture in Paris, reported in Hygie for May, is not the inferiority of French grain, as the millers try to make out, but is due to the elimination by modern methods of the energising and nutritive properties of the wheat, and this applies likewise to anitoba wheat, which is rich in gluten.

Hygienists, including many eminent, doctors, condemn the millers for removing the germ, the bran and the layers beneath, rich in mineral salts and vitamins. What remains after these extractions is not "the staff of life" but an impoverished flour, mainly starch and responsible for intestinal and other troubles. The flour having been robbed of practically all its nourishing qualities, the next step is to "improve" it by having recourse to chemicals, nitrous fumes, bromates, iodates, and sulphate of ammonia. On

the representation, however of medical societies and pharmacists these were prohibited in France.

Bean flour has also been used in France for a long time, but being badly prepared it communicates a bitter taste to the bread, which unsophisticated palates easily detect.

Another count in the indictment of white bread is the removal of the mineral elements such as (iodine) manganese, flourine, phosphorus, calcium, magnesium, all of which, even in infinitesimal quantities, are indispensable to health. Silicia, which is a constituent of the bran, is an important element in the treatment of tuberculosis.

• Topics of Interest from Health Periodicals • •

Metallic Contamination of Food and Effect of Cooking and Storage of Food Stuff in Aluminium Vessels.—DATTA (*Proc. Indian Acad. Sci.*, Bangalore, 2, 1935, pp. 322-332) determined the aluminium contents of various Indian food-stuffs before and after cooking in aluminium vessels and after storing in the latter and found out that aluminium goes into solution if it is in contact with fruit and vegetable juices, maximum being when in contact with tamarind solution. This corrosive action is aggravated by the presence of salt. Rats fed on milk-curds stored in glass and aluminium vessels respectively showed no difference in growth, reproduction and general well-being.—*Indian Dental Journal.*

Avoid Shaking Hands.—The practice of shaking hands is insanitary and is a common cause of infection. The average hand carries on its surface millions of colon germs, among which are sometimes found typhoid fever germs. This is known to be at the present time one of the most common ways in which typhoid fever is communicated.

Kissing is another insanitary social practice which ought to be abandoned. Positively dangerous is the practice of kissing infants and young children. Doubtless thousands of infants die annually as the result of infections communicated by this means. Hand shaking and kissing are undoubtedly among the most common means through which epidemics of colds, sore throat, flu, and pneumonia are propagated.

A Connecticut physician, Doctor Loveland, of Middletown, strongly advocates the adoption of the Japanese form of salutation in place of hand shaking. The *Scientific American*, endorsing Dector Loveland's views, comments as follows:

"The Japanese, instead of shaking hands, bow deeply and often several times when they meet socially. In a room full of Japanese this habit shows itself to be a gracious, cordial address, fully as friendly as our hand shake.

"We may well imitate the Japanese in their forms of politeness, for they have a reputation of being among the most polite people in the world.

"In our country a person with a cold contaminates his hands by his

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handkerchief and then, in shaking hands, inoculates other hands. If a public enemy wanted to start an epidemic of colds in a city, he could accomplish his purpose effectively by hiring a person with a cold to go about shaking hands with as many persons as possible.

"In Copenhagen, in a large laboratory, the staff and guests are instructed not to shake hands.

"If we could do away with this uncleanly and infectious habit in our country we would probably prevent much discomfort and loss of time from colds, and by preventing epidemics we would lesson loss of life among infants and old people. Pneumonia usually is ushered in by a cold.

"The embarrassment of refusing a handshake can be avoided by substituting a more kindly tone of voice and more of a smile and bow.

"If a group of our leading people such as our college professors, judges, and doctors—especially the doctors—would start the hygienic bow agoing they would be public benefactors.

"Placards could be used in places of congregation, requesting the omission of hand infection. With very little effort we could break up the unnecessary passing around of the bad that is temporarily in us. What misguided cordiality it is to distribute disease under the disguise of a friendly hand grasp. Many of us realize this fact but feel that we must continue to follow the conventional method of greeting because it is conventional. But it is a conventionality which arose before the age of science, and in our era it is essentially unscientific."—*Good Health* (*U S. A.*)

The Nobility of Health. —Said Emerson, "Give me health and a day and I will make the pomp of emperors ridiculous." The general disregard of health in modern times is perhaps a relic of the Middle Ages, when the body was treated with contempt and its abuse was regarded as a virtue.

The ancient Greeks wrote over their doors the motto, "A sound mind in a sound body." They did not believe it possible for a man to be sound mentally and morally without being sound physically.

Among the old Romans the cultivation of health was made the main business of life. When the Pagans ruled Rome, that city was full of the most magnificent baths. Those who have visited Italy and Rome will remember the ruins of those wonderful baths built by the Emperor Caracalla, where thousands of bathers could be served in a day. There was also the wonderful baths of Diocletian, of which the Pantheon constituted the vestibule. Those baths were in constant use by the populace, and they were patronized not simply for the purpose of cleanliness, but for health. There were also rooms provided in connection with these baths for all kinds of healthful exercises. But, unfortunately, in the early centuries of the Christian era, all these things were done away with,—these magnificent baths, the means of physical health, were torn down, and their stones built into churches, of which Rome already had enough. There are hundreds of immense churches that have not more than a hundred worshipers on ordinary days, and even on special days are never filled. Thus Rome is today a city of churches, but there are no baths: and we have it on good authority that for a thou-

sand years the bath was a thing unknown in Rome; indeed, writers of those times tell us that neglect of the body was counted among the cardinal virtues.

As a result of this false doctrine introduced during the Dark Ages, the body was neglected, abused, and tortured, with the idea that the soul would thus be made better. And, sad to relate, we have not seen the end of the practical workings of this theory yet. We often hear for instance about the ministry of sickness, when sickness is really the greatest possible misfortune that a person can have. I do not believe that sickness does any one any good in the long run. An affliction or disappointment now and then, which breaks off one's plans and checks his ambitions, may have a good effect upon him by helping him to see how powerless he is to carry out all his plans: but chronic sickness certainly cannot help anyone. Doctor Abernethy used to say, "Every sick man is a rascal."

Why should we live in the slums of disease and feebleness when there is a true nobility, a genuine aristocracy, a royalty of health, which may be ours if we will make it our aim and purpose in life?

What a boon it would be to the race if men would only become convinced of the value of health, and of the necessity of training for it! The more gold a man has, the greater are his efforts to obtain more—and why should it not be so with health.—*"Good Health."(U.S.A.)*

Prevention of Venereal Disease in Sweden.—The principles of venereal disease control in Sweden, first embraced in comprehensive legislation in 1919, are *thus outlined* by Dr. Reitz of Stockholm:—

1. Compulsory treatment of infected persons.
2. Free medical care, free medicine and free hospital care.
3. Notification of cases without the name.
4. Notification of sources to one health officer in each county or city.
5. Certain compulsory measures against persons who are sources or may have discontinued treatment.
6. Persons suffering from venereal disease in an infectious stage prohibited *from marrying or transmitting* infection.
7. Cost of venereal control borne by the central governments.

The right to treatment is accorded as long as the disease is in the infectious stage. Costs are paid by the State and treatment is given by district physicians or, in cities with more than twenty thousand inhabitants, in clinics.

Notification of and search for sources, according to Dr. Reitz, bring about *two thirds of reported sources* under treatment. Search for patients who have ceased treatment without permission from the physician, gives the same result.

Since 1919, syphilis has decreased from 6,000 new cases in a year to about 431; gonorrhoea only to half of its previous figure. Thus it is seen that syphilis has become a rare disease in Sweden. In Denmark and Norway likewise, active measures against the venereal diseases are being conducted with comparable results.

This work in Sweden has attained such success that the cost of the control measures is only one-half that of the previous decade.

Dr. Reitz stated that the difficulties in carrying out the legislation have not been great and that the results demonstrate that syphilis can be *greatly reduced through application* of the fundamentals of epidemiology, medicine and public health administration.—*Health News.—M. World.*

• Health Tit-Bits • • •

The board of health consists of three square meals a day.

* * *

Activity is liable to commit some injury but indolence is sure to do no good.—*J. G. von. Zimermann. I View.*

* * *

The art of life is to know how to enjoy a little and to endure much. —*Hazlitt.*

* * *

Employ your time improving yourself by other men's documents: so shall you come easily by what others have labored hard for.—*Socrates.*

* * *

Take care of the gladness in your life. No matter how full of trouble it is, there is sure to be one ray of brightness and that if you use it well, will light the whole.—*Civis Mundi.*

* * *

It is only by labour that thought can be made healthy, and only by thought that labour can be made happy and the two cannot be separated with impunity.—*Ruskins.*

* * *

The faculty members of Harvard University have conducted a study which shows that the unemployed are less healthy than those following gainful occupation. The unemployed have proportionately more illness and of these the extent of morbidity is greatest in those who do not seek employment, including the young, the housewives and the aged.—*Medical World.*

* * *

Sweets from Vegetables.—If an interesting news item received from Canada can be regarded as authentic, followers of Diet Reform may soon be able to enjoy sweets without experiencing any deleterious effects on their general health. Mr. Fred Stonburgh, a Toronto confectioner, has conceived the idea of making caramels from spinach and honey, and other sweetmeats from carrots and tomatoes.—*Health for All.*

* * *

Vitamin C in Tuberculosis.—Vitamin C given in pure form, or of orange juice in which it occurs naturally, improved the condition of tuberculosis patients, Drs. Molly Radford, Eugene de Savitsch and Henry C. Sweany of Chicago reported at the meeting of the Nat. Tuberc. Assoc. They used it in addition to the routine rest regimen. The reported improvement of the patients as compared with controls who received no extra vitamin C was indicated by laboratory tests, particularly of the blood.—*Science News-Letter.*

* * *

Bathing. — R. Cove-Smith. The Practitioner 133 : 164 (Aug.) 1934. Bathing is a healthy and invigorating pastime for the robust when judiciously used. Even for invalids and those of poor physique it has great advantages if special precautions are observed. The time and duration of the baths are important. Dangers are present for those with poor circulation: but hypertonics may derive considerable benefit from short immersions in warm weather and from warm sea-baths. The relation of aural complications to bathing is discussed and warning given to those with colds, sore throats or septic trouble of the upper respiratory passages to refrain from bathing. Warmed sea-baths are compared with open air bathing.—*Physical Therapy, X-ray, Radium.*